



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

SLW

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,692	12/19/2001	Trung T. Doan	500300.02	8574

7590 05/13/2004

Paul F. Rusyn  
Dorsey & Whitney LLP  
1420 Fifth Avenue, Suite 3400  
Seattle, WA 98101-4010

EXAMINER
----------

ROSE, ROBERT A

ART UNIT	PAPER NUMBER
----------	--------------

3723

DATE MAILED: 05/13/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/054,692

**Applicant(s)**

DOAN ET AL.

**Examiner**

Robert Rose

**Art Unit**

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-76 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Receipt is acknowledged of Applicant's Amendment, filed October 27, 2003.
2. The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.
3. A supplemental declaration covering all amendments that have been made during the prosecution of this application is necessary before this application may issue.
4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 3-6, 8-9, 12-13, 15-18, 20-21, 24-31, 33-36, 38-39, 42-45, 47-53, 54, 56, 58-59, 61-62, 65-68, and 70-76 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al. Cheng et al discloses a polishing machine(30) having a pad refurbisher(200) for CMP of a semiconductor and a method of refurbishing comprising:

Art Unit: 3723

a platen(40) having a polishing pad(42) with a polishing surface(44) thereon; a wafer carrier(100) and a pad refurbisher(200) having a body adapted for attachment(202) to the wafer carrier and a refurbishing element(204); the pad refurbisher is slidably attached to the wafer carrier(column 9, lines 20-26); a linear actuator attached to the body wherein the actuator independently moves the body with respect to the wafer carrier(col. 9, line 5 through col. 10, line 12); the distal face of the body defining a ring positioned radially outwardly from the perimeter of the wafer carrier and is symmetrically positioned about the center of the wafer carrier(fig. 4); the body has a plurality of arcuate segments positioned radially outwardly from the perimeter of the wafer carrier(fig. 8); and the refurbishing element is a pad conditioner having a plurality of embedded diamonds( col. 8, line 59 through col. 9, line 8, and col. 9, lines 45-50).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 7, 10-11, 14, 19, 22-23, 32, 37, 40-41, 46, 55, 57, 60, 63-64, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al in view of Tanaka et al. Cheng et al has been described above. Cheng et al does not disclose: the body is fixed to the wafer carrier; and the body has a first refurbishing ring that is a pad cleaner being positioned radially outwardly from the perimeter of the wafer carrier, and a second refurbishing ring that is a pad conditioner being positioned radially outwardly from the first refurbishing ring. Tanaka et al discloses that the refurbishing

Art Unit: 3723

body is fixed to the wafer carrier(fig. 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to fixedly attach the refurbishing body to the wafer carrier of Cheng et al as disclosed by Tanaka et al to simplify the apparatus(col. 7, lines 20-25). Further, Tanaka et al discloses the body has a first refurbishing ring that is a pad cleaner that is a brush(47) being positioned radially outwardly from the perimeter of the wafer carrier, and a second refurbishing ring that is a pad conditioner(46) being positioned radially outwardly from the first refurbishing ring(fig. 22 and 23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the refurbishing body of Cheng et al with a first and second refurbishing ring in view of Tanaka et al to lap the polishing pad and then move away the scraped off particles(col. 7, lines 11-14).

8. Applicant's arguments filed October 27, 2003 have been fully considered but they are not persuasive. Applicant's interpretation of the wafer carrier in Cheng et al as being limited to element(104) is deemed overly narrow, since any structure which serves to support the wafer may be read as part of the wafer carrier. With this broader interpretation, the support plate(110) of carrier head (100) is read as a wafer carrier, as it supports element(120) with the attached wafer. Thus, the refurbishing element(204) is connected to the face of the body, as broadly recited. In Tanaka et al the wafer carrier body is defined by element(40) which carries both the wafer(45) and the two refurbishing elements(46)(47). Clearly, in Tanaka et al the refurbishing elements are fixedly attached to the wafer carrier. Thus, in view of Tanaka et al, it would have been obvious to one of ordinary skill in the art at the time the invention was made to fixedly

Art Unit: 3723

attach the refurbishing body to the wafer carrier of Cheng et al, to simplify the apparatus(col. 7, lines 20-25). Further, Tanaka et al discloses the body has a first refurbishing ring that is a pad cleaner in the form of a brush(47), and a second refurbishing ring that is a pad conditioner(46). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the refurbishing body of Cheng et al with a first and second refurbishing ring in view of Tanaka et al to lap the polishing pad and then move away the scraped off particles(col. 7, lines 11-14).

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication should be directed to Robert Rose at telephone number (703) 308-1360.

Application/Control Number: 10/054,692  
Art Unit: 3723

Page 6

Robert Rose  
Primary Examiner  
Art Unit 3723

Rr

April 27, 2004.

A handwritten signature in black ink, appearing to read "Robert Rose", written over the date.